DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: General Motors Corporation Powertrain Group
Facility Address: 11032 Tidewater Trail, Fredericksburg, VA 22408
Facility EPA ID #: VAD 091 222 588

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _X___ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	___	_X_	___	No known releases
Air (indoors)[2]	___	_X_	___	No known releases
Surface Soil (e.g., <2 ft)	___	_X_	___	No known releases
Surface Water	___	_X_	___	No known releases
Sediment	___	_X_	___	No known releases
Subsurf. Soil (e.g., >2 ft)	___	_X_	___	No known releases
Air (outdoors)	___	_X_	___	No known releases

_X__ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

There were no records of releases from any units causing unacceptable threats to human health or the environment. Two drum storage pad areas (SWMUs 1 and 2) were certified "clean closed" by the VDEQ on February 27, 1996.

AOC 1 was the former site of a 100,000 gallon above ground tank that was used to store No. 2 fuel oil. This tank was removed and GM sampled the soil around the fuel lines and under the area covered by the tank to identify if there had been any releases associated with the unit. No petroleum hydrocarbon contamination was found and the site was deemed "clean closed" by Virginia's DEQ Above Ground Storage Tank Program on March 11, 1997. There were no documented releases associated with this area.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential **Human Receptors** (Under Current Conditions)						
"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	___	___	___	___			___
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	___	___	___	___	___	___	___
Surface Water	___	___			___	___	___
Sediment	___	___			___	___	___
Soil (subsurface e.g., >2 ft)				___			___
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):_____

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):_____

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
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5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):_____

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

_X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the General Motors Corporation Powertrain Group facility, EPA ID # VAD 091 222 588 , located at 11032 Tidewater Trail, Fredericksburg, VA 22408 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) Jennifer L. Taggart Date 6/22/99
(print) Jennifer L. Taggart
(title) Remedial Project Manager

Supervisor (signature) Robert E. Greaves Date 6-22-99
(print) Robert E. Greaves
(title) Chief, RCRA General Operations Branch
(EPA Region or State) U.S. EPA

Locations where References may be found:

U.S. Environmental Protection Agency
Region III
1650 Arch Street - 3WC23
Philadelphia, PA 19103-2029

Fredericksburg Library
1201 Caroline Street
Fredericksburg, VA 22401

Contact telephone and e-mail numbers

(name) Jennifer L. Taggart
(phone #) (215)814-2772
(e-mail) taggart.jennifer@epamail.epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

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ENVIRONMENTAL INDICATOR DETERMINATION
HUMAN EXPOSURES CONTROLLED
CA725

FACILITY NAME: GMC DELCO, FREDERICKSBURG, VA

HUMAN EXPOSURES CONTROLLED: NO CURRENT UNACCEPTABLE RISKS TO HUMANS DUE TO RELEASES OF CONTAMINANTS AT OR FROM THE FACILITY THAT ARE SUBJECT TO RCRA CORRECTIVE ACTION. THIS COVERS ALL TYPES OF RELEASES AND MEDIA. HUMAN EXPOSURE CONTROLS OR OTHER CORRECTIVE ACTION MUST HAVE BEEN IMPLEMENTED IN EVERY CASE WHERE A RELEASE HAS POSED A CURRENT UNACCEPTABLE RISK TO HUMAN HEALTH. THIS DETERMINATION CAN BE MADE WHEN ONE OF THE FOLLOWING ARE MET. (PLEASE CHECK AND COMPLETE)

* **Remedial measures in place and groundwater contaminant concentrations are below applicable MCLs or RBCs.**

YES **(NO)**

JUSTIFICATION: According to the file searches, no remedial measures are in place.

* **Action has been or site conditions are otherwise such that unacceptable threats to human health are not plausible based on current uses of the facility.**

(YES) **NO**

JUSTIFICATION: According to the file searches, there are no records of releases from any RCRA units causing unacceptable threats to human health or the environment. Two drum storage pads were clean closed in accordance with VHWMR in February, 1996.

SCHEDULED DATE: (DATE THIS EVENT IS ANTICIPATED)_____

ACTUAL DATE: (DATE THAT THE FACILITY HAS ACHIEVED THE EVENT OR THAT THE VENT IS NO LONGER APPLICABLE) — 1996_____

STATUS CODES: (CIRCLE ONE)

(YE)	(YES APPLICABLE AS OF THIS DATE)
NA	(PREVIOUS DETERMINATION NO LONGER APPLICABLE AS OF THIS DATE)
NC	(NO CONTROL MEASURES NECESSARY)

RPM NAME AND SIGNATURE: Dinesh Vithani
DATE: 6-30-97_____ Dinesh Vithani, VDEQ

BRANCH CHIEF DETERMINATION:
(Circle as appropriate)

a. Human Controlled determination has been made.

b. Previous Human Controlled determination is no longer applicable.

BRANCH CHIEF NAME AND SIGNATURE: _____
DATE: _____

OTHER COMMENTS: The facility does not have any pending issues at this time._____

ENVIRONMENTAL INDICATOR DETERMINATION
GROUND WATER RELEASES CONTROLLED
CA750

FACILITY NAME: GMC DELCO, FREDRICKSBURG, VA

GROUNDWATER RELEASES CONTROLLED: GROUNDWATER RELEASES ARE CONTROLLED. THIS EVENT CAN BE COUNTED WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS ARE FULFILLED AND DOCUMENTED BY FIELD MEASUREMENTS AND/OR OBSERVATIONS INCLUDING THE DIRECTION OF GROUNDWATER FLOW GRADIENTS OVER TIME. (PLEASE CHECK AND COMPLETE)

* An engineered system has been installed, that is designed and operating to effectively control further migration beyond a designated boundary, (e.g. facility boundary, a line upgradient of receptors or the leading edge of the plume as defined by levels above the Agency action level or clean up criteria.)

YES (NO)

JUSTIFICATION: According to file searches, there is no record of any engineered system installed.

* Groundwater cleanup objectives can be met without the use of an engineered system through the remedial measures selected, including where contamination will naturally attenuate.

YES NO (N/A)

JUSTIFICATION: There is no record of any groundwater contamination problem. It was never determined that groundwater was impacted due to storage of drums n the storage pads.

SCHEDULED DATE: (DATE THIS EVENT IS ANTICIPATED)_____

ACTUAL DATE: (DATE THAT THE FACILITY HAS ACHIEVED THE EVENT OR THAT THE VENT IS NO LONGER APPLICABLE)
__ 1996_____

STATUS CODES: (CIRCLE ONE)

(YE)	(YES APPLICABLE AS OF THIS DATE)
NA	(PREVIOUS DETERMINATION NO LONGER APPLICABLE AS OF THIS DATE)
NC	(NO CONTROL MEASURES NECESSARY)

RPM NAME AND SIGNATURE: Dinesh Vithani
DATE: 6-30-97_____ Dinesh Vithani, VDEQ

BRANCH CHIEF DETERMINATION:
(Circle as appropriate)

a. Groundwater Releases Controlled determination has been made.

b. Previous Groundwater Controlled determination is no longer applicable.

BRANCH CHIEF NAME AND SIGNATURE: _____
DATE: _____

OTHER COMMENTS: _____
_____
_____
_____
_____
_____
_____